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MEMORANDUM FOR IN-HOUSE PUBLICATIONS

FROM: PROI (TI) (STINFO) 13 Apr 98

SUBJECT: Authorization for Release of Technical Information, Control Number: AFRL-PR-ED-TP-1998-074
Keith McFall "COTAR Opening Remarks IHPRPT" **(Statement A)**

HPHS
SEMI-ANNUAL REVIEW 1

COTR OPENING REMARKS
IHPRPT

K. MCFALL

15 APRIL 1998

Introduction

- IHPRPT is a joint DOD-NASA-Industry program to increase US rocket propulsion capability by the year 2010.

- Technology development goals are selected by a government-industry panel, the IHPRPT steering committee.

- Planning began in 1992 and was finalized in 1996.

- IHPRPT consists of three phases with 2000, 2005 & 2010 end dates.

- The HPHS program is an IHPRPT effort supporting Phase I.

IHPRPT Goal

- HPHS effort addresses the Phase I Electro-Static Propulsion Goal
- The Goal is derived from the basic system performance metrics.
  - Thrust, Power, Life, Dry Mass, Specific Impulse
- Current Goal: 20% increase in system total impulse/wet mass
  - $I_{tot} = m_{dot}\, t_{life}\, I_{sp}\, g$: (N-s)
  - $M_{wet} = M_{dry} + (1+f_{tank})\, m_{dot}\, t_{life}$: (kg)
  - The Goal is a strong function of Isp
  - It is estimated that the HPHS performance level will approach that needed to meet the goal
- Contract SOW conforms to a previous set of IHPRPT requirements
  - Thruster & PPU Efficiency, Life, and Cost
- Current Goal was established by the steering committee during FY97

Contract Requirements and IHPRPT Goal

- **Contractor demonstrates Hall system meeting SOW requirements.**

- **Performance data will be used to evaluate system capability versus the Phase I Goal.**

- **Technology development is the primary focus. To reduce program cost, use of modeling and non-flight type components in demonstrating IHPRPT compliance is acceptable when technology development is not required.**

Concluding Remarks

- **The HPHS is an IHPRPT program.**

- **The program should result in a system that addresses both SOW performance requirements and the IHPRPT Total Impulse / Wet Mass goal.**

- **While the IHPRPT goal and SOW performance requirements are not identical, it seems that both can be addressed without significantly affecting the effort.**